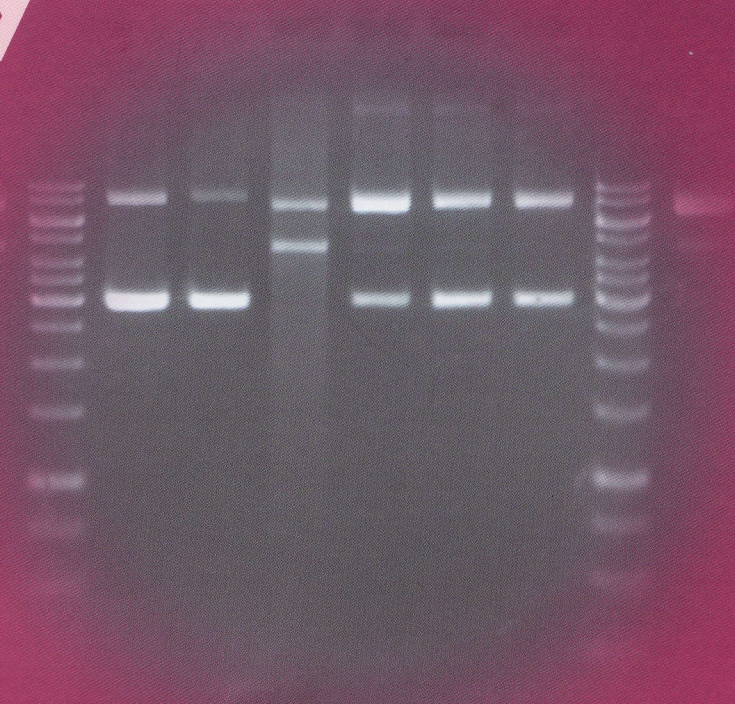
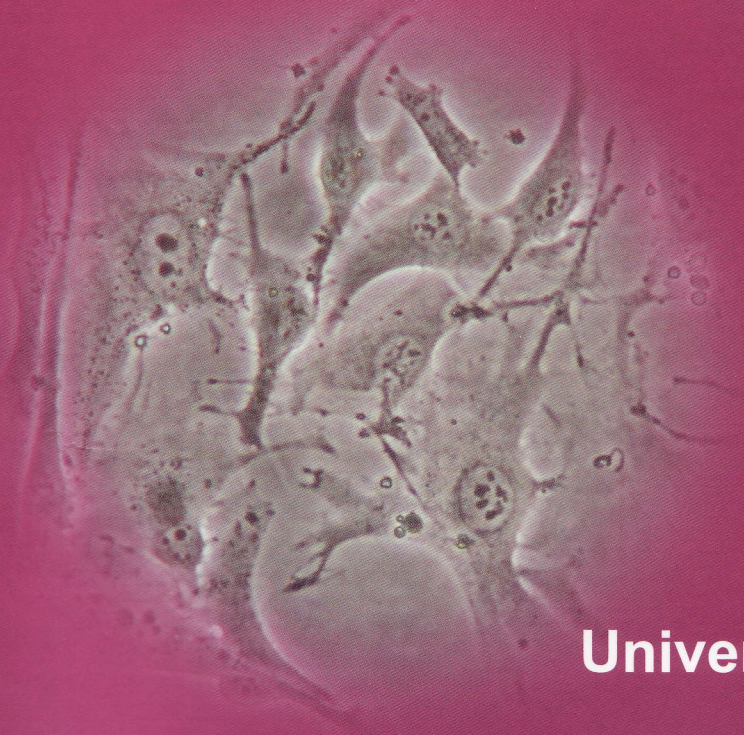
19th Intervarsity Biochemistry Seminar

2008



"Science Empowers Change"



22 March 2008

PB Block,
Petaling Jaya Campus
Universiti Tunku Abdul Rahman

Jointly Organised By

UTAR
UNIVERSITI TUNKU ABDUL RAHMAN

Persatuan Biokimia & Biologi Molekul Malaysia
Malaysian Society for Biochemistry & Molecular Biology

22/03/2008

KAMARUL RA... ...ARUDDIN
Head
Department of Biotechnology
Kulliyyah of Science
International Islamic University Malaysia
Jalan Istana, Bandar Indera Mahkota
25200 Kuantan, Pahang Da... Makmur

19th INTERVARSITY BIOCHEMISTRY SEMINAR

"SCIENCE EMPOWERS CHANGE"

22nd March 2008

Faculty of Engineering & Science,
Universiti Tunku Abdul Rahman

in collaboration with

The Malaysian Society for Biochemistry & Molecular Biology

Venue:
Universiti Tunku Abdul Rahman
Building PB, No. 13 Jalan 13/6
46200 Petaling Jaya, Selangor

P - 3

DISTRIBUTION AND DIVERSITY OF MACROINVERTEBRATES IN TASEK BERA, PAHANG

Nurhidayati Abd Aziz, Ahmed Jalal Khan Chowdhury*, Kamarul Rahim Kamarudin & Sofie Shaaruddin

Department of Biotechnology, Kulliyyah of Science, International Islamic University Malaysia (IIUM), Jalan Istana, Bandar Indera Mahkota, 25200 Kuantan, Pahang, Malaysia.
**Corresponding author: jkchowdhury@iiu.edu.my*

Being an internationally recognized wetland as the first Ramsar site in Malaysia, Tasek Bera located in Pahang, Malaysia is known for its rich and unique diversity of flora and fauna. However, up till now scientific and socioeconomic studies on the wetland are lacking despite the presence of wealth research opportunities. Due to the lack of information and consistent monitoring, Tasek Bera is susceptible to ecosystem degradation. Therefore, a comprehensive knowledge on the status of Tasek Bera ecosystem health is vital for accurate assessment of its environmental condition, and consequently for its sustainable and effective management. In view of that, this study was done to evaluate the water quality status of Tasek Bera by assessing the distribution and diversity of macroinvertebrates as the indicators. In addition, taxonomic identification of the macroinvertebrates based on morphological characteristics was also verified by using the molecular marker of cytochrome oxidase I (COI) mitochondrial DNA (mtDNA) gene through polymerase chain reaction (PCR) and phylogenetic analyses. Low diversity of macroinvertebrates was found in Tasek Bera, with the presence of one pollution-sensitive taxon, Plecoptera. Respectively, the water quality status in the area under assessment at Tasek Bera demonstrated slight organic pollution. Furthermore, through the use of molecular approaches, a sludge worm which was identified to be a member of Tubificidae family was verified and further correlated to genus *Tubifex* via the phylogenetic tree reconstruction. The information obtained in this study could serve as a baseline reference to various agencies involved in the management of Tasek Bera and the use of molecular approaches could be utilized to serve as useful tools in the field of conservation biology.

KEYWORDS: Tasek Bera, macroinvertebrates, water quality, cytochrome oxidase I, phylogenetic analyses, *Tubifex*